

The Office of Environment, Safety and Health and its Office of Nuclear and Facility Safety (NFS) publishes the Operating Experience Weekly Summary to promote safety throughout the Department of Energy (DOE) complex by encouraging feedback of operating experience and encouraging the exchange of information among DOE nuclear facilities.

The Weekly Summary should be processed as an external source of lessons-learned information as described in DOE-STD-7501-96, *Development of DOE Lessons Learned Programs*.

To issue the Weekly Summary in a timely manner, the Office of Operating Experience Analysis and Feedback (OEAF) relies on preliminary information such as daily operations reports, notification reports, and, time permitting, conversations with cognizant facility or DOE field office staff. If you have additional pertinent information or identify inaccurate statements in the summary, please bring this to the attention of Dick Trevillian, 301-903-3074, or Internet address dick.trevillian@hq.doe.gov, so we may issue a correction.

Internet addresses provided in the Weekly Summary will be formatted as lower-case alphabetical characters. Numerical characters will be specifically defined when used in Internet addresses. The Internet Uniform Resource Locator (URL) for the Weekly Summary is http://www.tis.eh.doe.gov/web/oeaf/oe_weekly/oe_weekly.html. The Weekly Summary, with word search capability, is also available on the OEAF home page at <http://tis.eh.doe.gov/web/oeaf>. If you experience difficulties accessing the Weekly Summary at these URLs, please contact Mark Mortensen at 208-525-3753 for assistance.

Readers are cautioned that review of the Weekly Summary should not be a substitute for a thorough review of the interim and final occurrence reports.

Operating Experience Weekly Summary 97-06

February 1 through February 6, 1997

Table of Contents

EVENTS	1
1. IMPROPER MOVEMENT OF ENRICHED RESTRICTED MATERIAL	1
2. PROBLEMS WITH RECEIPT SAMPLING OF DIESEL FUEL OIL AT SAVANNAH RIVER	3
3. WORKER CONTAMINATED WHILE CUTTING A GLOVEBOX.....	5
4. VIOLATION OF RADIOLOGICAL CONTROL POSTINGS	6
5. NUCLEAR REGULATORY COMMISSION PROPOSES \$650,000 FINE	9
6. MANUFACTURER RECALLS DEFECTIVE DILLON DYNAMOMETERS	11

EVENTS

1. IMPROPER MOVEMENT OF ENRICHED RESTRICTED MATERIAL

On January 31, 1997, at the Fernald Environmental Management Project, fissile material handlers violated plant procedures when they moved a drum containing enriched restricted material from one facility to another without approval. Investigators determined that the drum was one of several containing enriched restricted material moved to the repackaging facility. The drums were to be repackaged, then sent back to the original facility to await off-site shipment. Fissile material handlers could not repackage the material in one of the drums because the material had solidified. The repackaging facility supervisor sent that drum back to the original facility without a nuclear safety operation authorization. Failure to follow procedures could have resulted in unanalyzed conditions that could have reduced the safety margin for criticality. (ORPS Report OH-FN-FDF-FEMP-1997-0013)

Investigators determined the supervisor had a task order and a nuclear safety operation authorization that he thought were adequate for these movements. Nuclear criticality safety personnel prepared two nuclear safety operation authorizations, and the cognizant supervisor prepared two task orders. One task order and operation authorization were for the movement of drums containing enriched restricted material from the original facility for repackaging. A second order and authorization were for returning the repackaged drums to the original facility. Neither nuclear safety operation authorization addressed moving an enriched restricted material drum that had not been repackaged. Investigators determined that the material in this drum was subject to more restrictive nuclear criticality safety controls than the repackaged drums.

The contractor technical specialist convened a critique to investigate this event. Critique members determined that the fissile material handling personnel knew the drum had not been repackaged. They were preparing a new task order and a new nuclear safety operation authorization explicitly for the return of the drum to the original facility. The nuclear criticality safety group prepared and signed the new nuclear safety operation authorization, but the requester did not counter-sign the authorization. The authorization was not issued because personnel managing the original facility were not ready to receive the drum and store it properly. When the drum was received at the original facility it was stored in a temporary location and appropriate criticality requirements were met. The nuclear materials disposition manager is continuing to investigate this event to determine root and direct causes.

NFS reported criticality safety issues in 16 Weekly Summaries in 1996.

- Weekly Summary 96-37 reported that on September 9, 1996, at the Rocky Flats Environmental Technology Site, process operations specialists moved a drum containing fissile material from one room to another, violating posted restrictions. (ORPS Report RFO--KHLL-771OPS-1996-0148)
- Weekly Summary 96-28 reported that on June 25, 1996, at Rocky Flats Environmental Technical Site, nuclear material handling and packaging personnel in one building unpacked a 10-gallon container received from another building and discovered that the total mass of material in the container exceeded the building criticality safety operating limit of 1,000 grams net weight. Building managers terminated the unpacking operation and directed criticality engineers to assess and provide recommendations. (ORPS Report RFO--KHLL-PUFAB-1996-0083)

Operating Experience Analysis and Feedback (OEAF) engineers reviewed the Occurrence Reporting and Processing System (ORPS) database for nuclear criticality safety events caused by procedures not used or used incorrectly and found 140 events. Figure 1-1 depicts the distribution of the root causes of these events.

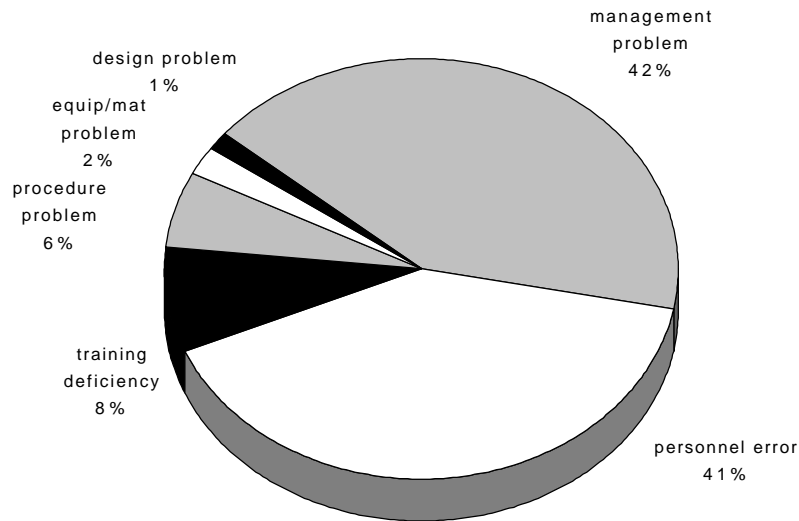


Figure 1-1. Distribution of Root Causes of Nuclear Criticality Safety Events with the Direct Cause of Procedures Not Used or Used Incorrectly¹

Management problems and personnel errors were the major contributors to nuclear criticality safety events caused by procedures not used or used incorrectly throughout the DOE complex. Table 1-1 shows the breakdown of each of the causal codes by percentage for each major area.

¹ OEAF engineers screened the ORPS database for Nature of Occurrence "01A@" (nuclear criticality safety) and for Direct Cause "3B@" (procedure not used or used incorrectly) DOE-wide and found 140 events.

TABLE 1-1. CONTRIBUTION TO NUCLEAR CRITICALITY SAFETY EVENTS BY CAUSAL CODES

**Management Problems
Percent**

Inadequate administrative control	39
Policy not adequately defined, disseminated, or enforced	28
Work organization/Work planning	14
Other management problem	14
Inadequate supervision	5

Personnel Errors

Inattention to detail	46
Procedure not used or used incorrectly	37
Other human error	13
Communication problem	4

DOE 5480.19, *Guidelines for the Conduct of Operations Requirements for DOE Facilities*, chapter I, "Operations Organization and Administration," states that workers and their supervisors should be held accountable for operating performance. Personnel involved in significant or frequent violations of operating practices should be counseled, retrained, and disciplined, as appropriate. Chapter XVI, "Operations Procedures," states that procedures should be referenced during infrequent or unusual evolutions when the operator is not intimately familiar with the procedure requirements or when errors could cause significant adverse impact to the facility. DOE facility managers should ensure that all operators and supervisors are familiar with operating procedures and understand their purpose and use. This understanding is even more important when criticality safety issues are involved.

KEYWORDS: criticality safety, fissile material, procedure

FUNCTIONAL AREAS: nuclear/criticality safety, material handling/storage

2. PROBLEMS WITH RECEIPT SAMPLING OF DIESEL FUEL OIL AT SAVANNAH RIVER

On January 28, 1997, personnel from an off-site laboratory notified Savannah River Site personnel that samples taken from a January 21 diesel fuel delivery failed a particulate test. When Central Services Works Engineering managers learned of the test result, they immediately shut down the suspect tank and advised site fuel delivery personnel to discontinue delivering fuel from the tank until further notice. Managers evaluated all fuel delivery tickets to determine which site customers received the fuel. They determined that no safety-related equipment was fueled from the batch. Proper sampling, storage, and handling of diesel fuel—especially fuel used for standby diesel generators—is necessary to assure the reliability of key facility systems. (ORPS Report SR--WSRC-CSWE-1997-0002)

A vendor delivered 6,000 gallons of No. 2 low-sulfur diesel fuel to the 10,000-gallon, on-site dispensing tank. Operators took a fuel sample from the tanker for on-site analysis of flash point, American Petroleum Institute gravity, viscosity, sediment, and water before authorizing the fuel to be off-loaded to the tank. As part of the site fuel quality program, operators pulled another sample and sent it to an off-site laboratory for analysis of all 12 properties required by the site engineering standard. Included in the analysis were tests for particulate, sulfur, ash, and cloud point. Off-site laboratory personnel reported that the fuel failed the particulate test. The acceptable particulate level for receipt was 5 mg/l, and the particulate level of the sample measured 9 mg/l. On January 29, 1997, the diesel fuel vendor removed the fuel from the tank and replaced it with fresh fuel.

The off-site laboratory also analyzed a sample of fuel drawn directly from the dispensing tank. It indicated 0.8 mg/l particulate. Investigators determined the hose used to draw the sample from the tanker was not flushed after the vendor used it for an earlier delivery with a particulate level of 9 mg/l. Investigators determined the original shipment was, in fact, within acceptable parameters for receipt.

To prevent possibly contaminated diesel fuel from being used before all analyses have been completed, Central Services Works Engineering managers are modifying their receipt process and will use a "quarantine tank" for future fuel deliveries. Diesel fuel will be kept in the holding tank and isolated from existing inventories until samples have been taken, analyses have been performed, and the fuel is cleared for use.

This event illustrates conditions that could significantly compromise the safety of facility operations and personnel. If degraded fuel supplies are used for standby diesel generators, their operation may be compromised. The purpose of receipt sampling is to verify that the delivered product has the correct properties for diesel operation and to screen the fuel for contamination problems. Some fuel suppliers may not perform fuel analysis on their deliveries; their product specification papers may reflect only what they intended to deliver, not the parameters for that particular batch.

Operating Experience Analysis and Feedback engineers recommend taking a sample of the fuel from the bottom of the transport tank before adding new diesel fuel to storage tanks. Hoses and sample points should be flushed of residual fuel before sampling. As a minimum, before adding the new fuel to existing supplies, the sample should be visually checked for clarity and brightness (as defined by ASTM D4176, *Test Method for Free Water and Particulate Contaminant in Distillate Fuels*) and tested in accordance with ASTM D975-91, *Specification for Diesel Fuel Oils*, for American Petroleum Institute gravity, kinematic viscosity, water, sediment, and flash point.

The DOE Backup Power Working Group has issued a handbook on diesel generators used for backup power sources at DOE facilities. Volume 1 of the handbook, *Guidelines and Practices for the Design, Procurement, Storage, Handling, and Testing of Diesel Fuel Oil to be Used in DOE Backup Power Sources (U)*, provides important information and guidelines related to the use, care, and handling of diesel fuel oil. This volume contains a compilation of best practices that can be used as a guide for designing and maintaining a reliable diesel fuel system. To obtain a copy of the handbook, contact John Fredlund, (301) 903-3059 or e-mail a request to john.fredlund@dp.doe.gov.

NFS issued DOE/EH-0389, Safety Notice 94-01, "Contamination of Emergency Diesel Generator Fuel Supplies," in July 1994. The notice provides guidance and good practices for diesel fuel sampling and testing and for the use of additives. Safety Notice 94-01 can be obtained by contacting the Info Center, (301) 903-0449, or by writing to ES&H Information

Center, U.S. Department of Energy, EH-74, Suite 100, Century XXI, Third Floor, Germantown, MD 20874.

KEYWORDS: diesel fuel, sampling, procurement

FUNCTIONAL AREAS: operations, procurement

3. WORKER CONTAMINATED WHILE CUTTING A GLOVEBOX

On January 29, 1997, at the Rocky Flats Environmental Technology Site, a deactivation and decommissioning worker received skin contamination while cutting a glovebox with a power-driven cutter in a soft-sided containment house. The work crew consisted of three workers and a radiological control technician. All were properly dressed in personal protective equipment. While exiting the containment house because of high a Derived Air Concentration (DAC) reading, the radiological control technician found alpha contamination on the worker who was cutting the glovebox. The worker had 2,000 dpm/100 cm² on his neck, 7,000 dpm on his chest area, and 7,000 dpm on the inside of his left upper arm. The radiological control technician also detected 7,000 dpm on the worker's respirator facepiece. The worker was successfully decontaminated. This event is significant because particles from the cutting operation passed through the protective clothing, contaminating the worker's skin. (ORPS Report RFO--KHLL-PUFAB-1997-0011)

The workers were inside the soft-sided containment house for about 2 hours cutting the sides of the glovebox. A DAC sample indicated 1,700, which exceeded the 500-DAC limit on the radiological work permit. Mouth and nasal smears of all workers were negative; a body count of the contaminated worker was also negative.

The radiological control technician reported finding small holes in the chest and arm areas of the contaminated worker's protective clothing. Although no chips were observed, investigators believe hot metal chips from the power-driven cutter burned holes in the clothing. The inner layers of the cloth anti-contamination and modesty clothing were soaked with perspiration and allowed contamination to pass through to the worker's skin.

The facility manager held a fact-finding meeting on January 30, 1997. Managers for the deactivation and decommissioning activities terminated all work until review of the incident is completed. Managers are looking into shielding options to protect workers and their clothing during metal cutting operations.

NFS reported personnel receiving skin contamination and uptakes while cutting or cleaning contaminated materials during decontamination and decommissioning activities in Weekly Summaries 96-17, 95-41, and 94-38.

- On October 26, 1995, at Rocky Flats, two teams of two workers each were contaminated while blasting a stainless steel part covered with a powdery coating of uranium oxide. The part had 300,000 dpm removable beta contamination. Investigators believed the blast pressure caused contamination to pass through the personal protective equipment and onto the skin of three of the four workers. A worker in the first team received the highest contamination (54,000 dpm on his legs). (Weekly Summary 96-17; ORPS Report RFO--KHLL-NONPUOPS1-1995-0023)
- On October 3, 1995, a Sandia National Laboratory subcontractor was contaminated on his clothing and skin while using a carbon dioxide cleaning unit

to decontaminate a valve. Investigators believe the subcontractor was contaminated either by particle migration through his double layer of anti-contamination clothing, which was moist from perspiration, or by exposure to airborne activity when he removed his protective equipment inside the decontamination room. (Weekly Summary 95-41; ORPS Report ALO-KO-SNL-6000REACT-1995-0005)

- On September 9, 1994, at Argonne National Laboratory—East, workers involved in the decontamination and decommissioning project for the Experimental Boiling Water Reactor received uptakes. The workers activities included removing activated bioshield concrete and underwater plasma-arc segmenting of internal reactor components. (Weekly Summary 94-38; ORPS Report CH-AA-ANLE-ANLEER-1994-0009)

DOE contractors who operate equipment for cutting and decontaminating facility structures, systems, and components need to ensure that protective clothing will prevent the migration of contaminated particles and residues through the material onto the worker's skin. Radiological evaluations should also be performed after workers complete their activities to assess the effectiveness of barriers used for personnel protection. DOE/EM-0142P, *Decommissioning Handbook*, chapter 10, "Dismantling, Segmenting, and Demolition," provides detailed descriptions for dismantling and segmenting techniques using mechanical cutters and torches. Chapter 12, "Worker Protection," provides guidance for personnel protection and monitoring for exposures to inhalation, skin contact, trauma, heat, and cold.

Because decontamination and decommissioning activities continue at many DOE facilities, and will likely increase, the Office of Operating Experience Analysis and Feedback is requesting information on good practices used for cutting, cleaning, and decontaminating structures, systems, and components. Anyone experienced in these activities, who would like to share proven good practices, should contact Cliff Wallen, Research Planning, Inc., (301) 540-2396. Operating Experience Analysis and Feedback engineers will compile and evaluate this information for a future Weekly Summary article.

KEYWORDS: radiation protection, decontamination and decommissioning

FUNCTIONAL AREAS: radiation protection, decontamination and decommissioning

4. VIOLATION OF RADIOLOGICAL CONTROL POSTINGS

On January 29, 1997, at the Savannah River Site, a tour leader and five members of a tour group entered a posted Radiological Buffer Area (RBA) in the P-Area facility without signing the required radiological work permit. The group consisted of both Westinghouse Savannah River Company and DOE personnel. One group member also entered the area without the proper dosimetry. The tour leader disregarded an entry posting because he incorrectly believed that the facility entry plan allowed them to enter without signing the radiological work permit. Although no one was contaminated, failing to follow radiological control postings increases the risk for spread of contamination and personnel exposures. (ORPS Report SR--WSRC-REACP-1997-0001)

The tour leader contacted the P-Area decontamination and decommissioning facility manager to request entry and was given a copy of the entry plan. The manager told the tour leader that he did not have to sign a work clearance permit. After reading the entry plan, the tour leader started the tour. When the leader entered a posted RBA, a group member asked if they needed to sign a radiological work permit. The leader stated that the facility entry plan

did not require it. Three members of the group stayed outside the RBA and read the entry plan while the rest toured the RBA. After the tour, a DOE facility representative, who had remained outside the RBA, contacted radiological control operations personnel to determine if the policy for entering RBAs had changed. He was told that all radiological controls signs were maintained up-to-date and must be obeyed.

The facility manager held a critique on January 30, 1997, to determine the cause of the event. Critique members believe that the tour guide may have confused the two permits: when told he did not have to sign a work clearance permit, he thought he did not need to sign a radiological work permit. The facility manager recommended the following corrective actions.

- The lessons-learned coordinator will distribute a site-wide lessons-learned bulletin to re-emphasize that all radiological postings must be adhered to regardless of their location or the condition of the facility and to remind personnel to contact radiological control operations with questions related to postings.
- The facility manager will review the adequacy of the facility entry plan, including postings, selection of tour guides, and tour briefings.

NFS reported violations of radiological controls postings in Weekly Summaries 96-37, 96-29, 96-26, 96-25, 96-20, 96-05, 96-03, 95-18, and 95-17.

Operating Experience Analysis and Feedback (OEAF) engineers reviewed the Occurrence Reporting and Processing System (ORPS) database for all reports involving violations of radiological controls and safety postings. Figure 4-1 shows facility managers reported personnel error as the root cause for 76 percent of these events and management problems for another 18 percent.

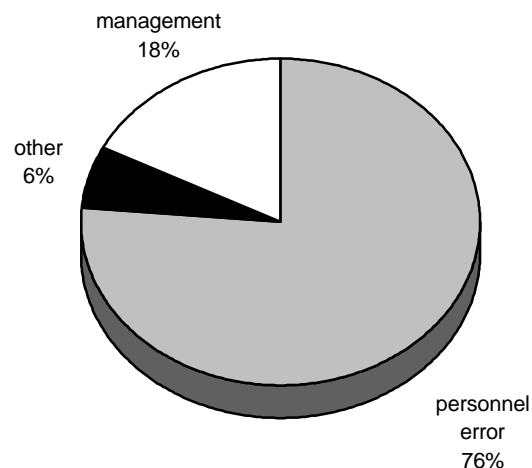


Figure 4-1. Distribution of Root Causes for Violation of Postings¹

¹ OEAF engineers screened the ORPS database for reports using narrative violat@, radiation+radiological, posting@ and found 385 reports. A 100 percent review of these reports yielded 105 occurrence reports.

Further review shows that facility managers reported inattention to detail as the major contributor for personnel errors and inadequate administrative control as the major contributor for management problems. Table 4-1 shows the breakdown for the causal codes for personnel errors and management problems.

**TABLE 4-1. BREAKDOWN OF PERSONNEL ERROR AND MANAGEMENT PROBLEM
CAUSE CODES DOE-WIDE**

Personnel Errors	Percent
Inattention to detail	54
Procedure not used or used incorrectly	35
Communication problems	7
Other human errors	4
Management Problems	
Inadequate administrative control	41
Policy not adequately defined, disseminated, or enforced	17.5
Inadequate supervision	17.5
Work organization or planning deficiency	12
Other management problems	12

This event is significant because failure to pay attention to the requirements of postings can lead to serious consequences such as overexposures or violations of as-low-as-reasonably-achievable principles. A casual or inattentive attitude can lead to increased radiation exposures and contamination levels. Entry requirements are posted to ensure that personnel have the proper training, protective and respiratory equipment, dosimetry, and escorts before entering controlled areas.

DOE/EH-0256T, *Radiological Control Manual*, section 231, "Posting Requirements," states that radiological posting shall be used to alert personnel to the presence of radiation and radioactive material and to aid them in minimizing exposures and preventing the spread of contamination. Section 123, "Worker Responsibilities," states that trained personnel should recognize that their actions directly affect contamination control, personnel radiation exposure, and the overall radiological environment associated with their work. The first rule of worker responsibility is to obey posted, written, and oral radiological control instructions and procedures, including instructions on radiological work permits. Personnel working at DOE facilities should have a continually questioning attitude toward safety issues and area postings. Each individual is ultimately responsible for complying with rules to ensure personal safety. Facility managers should communicate a sound policy stressing that safety is of prime importance and that all personnel must exhibit an individual commitment to excellence and professionalism.

KEYWORDS: postings, radiological buffer area, tour, radiological work permit

FUNCTIONAL AREAS: radiation protection

5. NUCLEAR REGULATORY COMMISSION PROPOSES \$650,000 FINE

On January 24, 1997, the U. S. Nuclear Regulatory Commission (NRC) Office of Public Affairs issued a press release stating that the Commission proposed a \$650,000 fine against a public utility for violations of NRC requirements. The violations were associated with injecting foam sealant into the water supply for the station's equipment cooling system. The press release stated that the injection occurred during concrete repairs in May and June 1996. The injection led to the shutdown of both reactor units at the station on June 28, 1996, to remove the material from the intake structure and inspect the equipment cooling system. (USNRC Office of Public Affairs No. 97-07)

Contractor personnel used the sealant to repair cracks in a concrete intake structure known as the service water tunnel. Some of the sealant passed through the concrete walls into the water in the tunnel. The sealant could have clogged strainers and affected the flow of service water into safety-related equipment cooling systems, including reactor emergency core cooling pumps and emergency diesel generators. The service water system also provides cooling water to heat exchangers needed to cool the reactor following a loss of coolant accident.

The NRC regional administrator stated this event indicated the utility had significant weaknesses in areas of (1) work planning activities; (2) oversight of contractor maintenance on safety-related structures; (3) engineered support for plant operations; and (4) identification, evaluation, and correction of significant safety issues at the station. He stated that he was particularly concerned with the lack of appropriate safety focus and lack of a questioning attitude by utility personnel.

The proposed fine consists of two components. The first is a \$600,000 fine for planning and performing the sealant injection as "minor maintenance," without documented instructions and procedures, and for failing to promptly identify the presence of the sealant in the tunnel water and take prompt corrective actions. An additional \$50,000 fine was levied for violations associated with the operation and testing of the safety-related equipment cooling system. The utility has 30 days to pay the fine or protest it.

Under the Atomic Energy Act of 1954, as amended, the NRC has the authority to propose fines for commercial nuclear utilities, uranium fuel fabricators, and other nuclear-related companies for violations of procedures, work instructions, and design requirements. This proposed fine is an example of the increase in regulatory enforcement by federal, state, and local regulatory agencies. Under the provisions of the Price-Anderson Amendments Act, DOE can fine contractors for violations of Department rules, regulations, and compliance orders relating to nuclear safety requirements. In October 1995, DOE implemented the organizational infrastructure, training, and formal guidance required for enforcement actions, including Notices of Violation and, where appropriate, non-reimbursable civil penalties. The DOE Office of Enforcement and Investigations issued \$117,500 in civil penalties in 1996. The contractors who were fined have accepted the penalties and paid the fines.

This event illustrates the importance of effective maintenance activities, adherence to procedures, and appropriate safety focus. DOE-STD-1950-93, *Guideline to Good Practices for Planning, Scheduling, and Coordination of Maintenance at DOE Nuclear Facilities*, section

2.14, defines minor maintenance and states that work considered to be minor maintenance must include all listed conditions. These conditions include the following: (1) the component is nonsafety-related or, if safety-related, the portion or part being worked does not perform or affect a safety-related function; (2) integrity of the component will not be violated; (3) welding will not be performed on a component or part that is safety-related, treated as safety-related, or seismically qualified; (4) a tagout will not be required; and (5) "documented" post-maintenance testing will not be required. Appendix C of the standard provides examples of work characterized as minor maintenance and work that would not qualify as minor maintenance. This standard also specifies information that may be used for the development and implementation of a rigorously controlled maintenance program. DOE-STD-1053-93, *Guideline to Good Practices for Control of Maintenance Activities at DOE Nuclear Facilities*, addresses the elements considered essential for maintenance managers and direct line supervisors to ensure maintenance practices result in personnel safety; resource effectiveness; structures, systems, and components protection; and safe and reliable operations capacity through direct observation, documentation review, and post-activity analysis. The standard discusses engineering reviews, subcontractor control, and post-maintenance testing of safety-related components.

KEYWORDS: maintenance, safety-significant, work control, work planning

FUNCTIONAL AREAS: mechanical maintenance, work planning

6. MANUFACTURER RECALLS DEFECTIVE DILLON DYNAMOMETERS

On January 29, 1997, at the Princeton Plasma Physics Laboratory, an equipment distributor, notified the facility manager that some DILLON Model AP dynamometers supplied to the Laboratory were manufactured with substandard materials. A product recall notice stated that units with serial numbers between 6620 and 7971, shipped between June 13, 1996, and December 4, 1996, with a capacity of between 4,000 and 20,000 pounds were suspect. Laboratory investigators found two dynamometers meeting these criteria and removed them from service. They were returned to the manufacturer for inspection and testing. A dynamometer failure during lifting could result in an injury, fatality, or equipment damage. (ORPS Report CH-PA-PPPL-PPPL-1997-0001)

NFS recently reported an incident involving a failed DILLON mechanical dynamometer in Weekly Summary 96-25. On June 14, 1996, the Lessons Learned Coordinator at Idaho National Engineering Laboratory submitted a report about a 20,000-pound capacity, DILLON Model AN mechanical dynamometer that failed at the Navy Reactor Facility. The failure occurred while U.S. Navy contractors were lifting an 8,500-pound load on March 28, 1996. The load dropped 8 feet, damaging refueling equipment. Investigators determined that the failure occurred because of brittle fracture. Navy contractor representatives contacted the manufacturer, Weigh-Tronix, of Fairmont, Minnesota, and learned that the dynamometer was more than 25 years old and possibly at the end of its useful life. (INEL Lessons Learned #96281)

The manufacturer requests that you contact the RECALL HOTLINE, 1-800-368-2031, if you have questions or need additional assistance. The telephones are staffed from 0815 to 1700 Central Standard Time, Monday through Friday, and are answered by phonemail during off hours.

DOE and facility managers should ensure a program or system is in place to review facility dynamometers to verify if any are covered by this recall notice.

KEYWORDS: defective, lifting, test

FUNCTIONAL AREAS: industrial safety, hoisting and rigging